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Signature

August 24, 2006
Date of Signature

PATENT
Case No. GP-304028
(2760/134)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent application of:	)	
	)	
WILLIAM E. MAZZARA, JR.	)	
	)	Examiner: PHUONG, DAI
Serial No.: 10/675,349	)	
	)	Group Art Unit: 2685
Filed: SEPTEMBER 30, 2003	)	
	)	Conf. No. 5776
For: METHOD AND SYSTEM FOR RESPONDING TO DIGITAL VEHICLE REQUESTS	)	

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Dear Sir:

Please consider Appellant's appeal brief as follows.

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1. REAL PARTY IN INTEREST

The real party in interest is Assignee General Motors Corporation, a corporation having an office and a place of business at 300 Renaissance Center, Detroit, Michigan, 48265-3000.

2. RELATED APPEALS AND INTERFERENCES

Appellant and the undersigned attorneys are not aware of any appeals or any interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS

Claims 1-2, 5-10, 12-14, and 17-20 were rejected as unpatentable over United States Patent 6,487,500 to Lemelson ("Lemelson") in view of United States Patent Publication 2001/0029425 to Myr ("Myr") under 35 U.S.C. §103(a).

Claims 3 and 15 stand rejected as unpatentable under 35 U.S.C. §103(a) over Lemelson in view of Myr in further view of United States Patent Publication 2005/0003812 to Gladwin ("Gladwin").

Claims 4, 11, and 16 stand rejected as unpatentable under 35 U.S.C. §103(a) over Lemelson in view of Myr in further view of United States Patent Publication 2001/0044315 to Aoki ("Aoki").

Claims 4, 11, and 16 are the claims on appeal. *See*, Appendix.

4. STATUS OF AMENDMENTS

Applicants filed an after final response including claim amendments that was not entered.

5. SUMMARY OF CLAIMED SUBJECT MATTER

In this summary of claimed subject matter, all citations are to the specification of United States Patent Application 10/675,349. Further, all citations are illustrative only and support for the cited element may be found elsewhere in the specification. See, pages 9-12 of the specification, *inter alia*, and FIG. 2.

Claim 4

The invention relates to a method for responding to digital vehicle requests. The method includes receiving 225 a voice query by a telematics unit, wherein the telematics unit 120 comprises at least one analog digital converter. The voice query is converted 230 to a compressed digital signal and the compressed digital signal is transmitted 235 to a call center node 170 in communication with an information database via a wireless network 140. The signal is parsed 245 at the call center node to determine an inquiry and the information database is accessed 245 based on the inquiry. At least one response is formulated 250 in response to the inquiry and transmitted 255 in a digital format over the wireless network to the telematics unit. The response is then translated 260 to an analog format at the at least one analog digital converter. The voice query digital signal is compressed at the telematics unit, at more than two times the compression ratio of human recognizable audio data compression, and the formulated response is compressed to allow a user of the telematics unit to understand the formulated response.

Claim 11

Another aspect of the invention relates to a computer usable medium including a program for responding to digital vehicle requests. The medium includes computer readable code for receiving 225 a voice query by a telematics unit, wherein the telematics unit 120 comprises at least one analog digital converter. The medium further includes computer readable code for converting the voice query 230 to a compressed digital signal and computer readable code for transmitting the compressed digital signal 235 to a call center node 170 in communication with an information database via a wireless network 140. In addition, the medium includes computer

readable code for parsing the signal 245 at the call center node to determine an inquiry and the information database is accessed 245 based on the inquiry. The medium further includes computer readable code for formulating at least one response 250 in response to the inquiry and computer readable code for transmitting 255 in a digital format over the wireless network to the telematics unit. The medium further includes computer readable code for translating the response 260 to an analog format at the at least one analog digital converter. In addition, the medium includes computer readable code for compressing the voice query digital signal at the telematics unit, at more than two times the compression ratio of human recognizable audio data compression, and computer readable code for compressing the formulated response to allow a user of the telematics unit to understand the formulated response.

Claim 16

Another aspect of the invention relates to a system for responding to digital vehicle requests. The system includes means for receiving 225 a voice query by a telematics unit, wherein the telematics unit 120 comprises at least one analog digital converter. The system further includes means for converting the voice query 230 to a compressed digital signal and means for transmitting the compressed digital signal 235 to a call center node 170 in communication with an information database via a wireless network 140. In addition, the system includes means for parsing the signal 245 at the call center node to determine an inquiry and the information database is accessed 245 based on the inquiry. The system further includes means for formulating at least one response 250 in response to the inquiry and means for transmitting 255 in a digital format over the wireless network to the telematics unit. The system further includes means for translating the response 260 to an analog format at the at least one analog digital converter. In addition, the system includes means for compressing the voice query digital signal at the telematics unit, at more than two times the compression ratio of human recognizable audio data compression, and means for compressing the formulated response to allow a user of the telematics unit to understand the formulated response.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 4, 11, and 16 were rejected as unpatentable under 35 U.S.C. §103(a) over Lemelson in view of Myr in further view of Aoki.

7. ARGUMENTS

Claims 4, 11, and 16 were rejected as unpatentable under 35 U.S.C. §103(a) over Lemelson in view of Myr in further view Aoki

The §103(a) rejection of claims 4, 11, and 16 is traversed.

Lemelson in view of Myr in view of Aoki fails to teach or suggest, at least, that the compression algorithm compresses the voice query signal at more than two times the compression ratio of human recognizable audio data compression *and* the formulated response is compressed to allow a user of the telematics unit to understand the formulated response as claimed in amended claims 1, 9, and 13.

The Examiner correctly notes the failure of Lemelson or Myr, alone or in combination, to suggest any such limitation. Rather, the Examiner relies on Aoki for such a teaching. However, at most, Aoki teaches a radio communication system using variable packet length. Thus, Aoki teaches a packetization system that does not *compress* the data, but rather results in *dividing* the data so that the size of each packet is set to an appropriate size so that transmission of the packet is completed during the vehicle stay in a communication area. See, Aoki, ¶¶47-53.

Aoki teaches that when large data is downloaded from base stations to the terminal station (or vice versa), the data is divided and packetized. *See*, Aoki, ¶47 (below). Additionally, when the data to be transmitted is divided into packets in this way, the size of the packet should be set to an appropriate size so that transmission of the packet is completed during the vehicle stay in a communication area. Since the time of the vehicle stay in a communication area depends on the vehicle traveling speed, the Aoki system estimates the time of the terminal station antenna stay in a communication area by detecting a vehicle speed when the vehicle enters the communication area and sets the length of the packet to be the longest as far as transmission of the packet can be completed during the stay in the communication area. See, Aoki, ¶47.

[0047] When large data is downloaded from base stations K to the terminal station T, the data is divided and packetized in the control station S first. For example, the data is divided and packetized into three parts for three communication areas a, b, c, and transmitted to the three base stations K of the communication areas a, b, c as shown in FIG. 1A. Each of three base stations K starts to transmit the received packet when the terminal station T enters the corresponding communication area. In this way, the terminal station T receives the three packets sequentially as the vehicle passes through the communication areas a, b, c. The terminal station T extracts the packets received from the three base stations K by demodulation. The terminal station T further converts the extracted packets to parts of data in the original form and restores the original data by combining the parts of data. The restored data may be used for an application executed on the terminal station T. On the other hand, when large data is uploaded from the terminal station T to base stations K, the terminal station T divides the data into a plurality of packets for a plurality of communication areas, and the packets are sequentially transmitted to the corresponding base stations K as the vehicle passes through the communication areas. The packets received by the base stations K are transmitted to the control station S. The control station S combines the packets and restores the original data.

Thus, Aoki teaches *adjusting a packet size* for transmission based on vehicle speed. In contrast, the claims require *compressing* the voice query signal at more than two times the compression ratio of human recognizable audio data compression. Those of ordinary skill in the art recognize the difference between *packetization* of data, and *compression* of the data.

Additionally, Aoki teaches that the degree of packetization is based on vehicle speed, rather than the claimed ratio of human recognizable audio data compression. As noted in the specification, a signal intended for a human recipient cannot be maximally compressed due to the need for a human to understand the request as maximally compressed signals may not be comprehensible to humans. See, pg. 1, lines 15-19 of the specification (below). Furthermore, those of ordinary skill in the art would recognize that packetization and compression are entirely different concepts and processes.

[0002] Communication devices that communicate between a vehicle, an interactive application, and an advisor on a remote node presently accomplish this through a circuit switched voice connection. Upon a user's request from a vehicle, an analog voice input is encoded into a digital signal intended for a human recipient. This signal cannot be maximally compressed due to the need for a human advisor to understand the request—maximally compressed signals may not be comprehensible to humans. The encoded digital

While compression ratios are known in the art, the prior art does not teach or suggest utilizing a first ratio (more than two times the compression ratio of human recognizable audio data compression) to transmit a voice query in one direction, and using a second ratio different from the first ratio (to allow a user of the telematics unit to understand the formulated response) to transmit a response to the voice query in the opposite direction. Providing speech recognition at a remote location is difficult, and has been previously complicated by multiple analog to digital conversions (see, page 1, lines 13-30 of the specification). Utilizing a 'high' ratio of compression (more than two times the compression ratio of human recognizable audio data compression) increases the amount of data, and preserves more of the original signal, that can be transmitted to the speech recognition engine using available bandwidth.

Furthermore, there can be no motivation to combine these three references in light of the failure of each to either denounce their teachings as less than an ideal solution, or to proclaim the desirability of compression. This is especially true given the teachings of Aoki regarding the desirability of variable packet length, rather than the desirability of including a first compression ratio for communications in one direction, and a second compression ratio for communications in the opposite direction.

Withdrawal of the rejections to claims 4, 11, and 16 is requested.

SUMMARY

The Examiner's rejections of claims 4, 11, and 16 have been obviated by remarks herein supporting an allowance of pending claims 4, 11, and 16 over the art of record. The Appellant respectfully submits that claims 4, 11, and 16 herein fully satisfy the requirements of 35 U.S.C. §§ 102, 103 and 112. In view of the foregoing, favorable consideration and passage to issue of the present application is respectfully requested. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Dated: **August 24, 2006**

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CLAIMS APPENDIX

1. A method for responding to digital vehicle requests, the method comprising:

receiving a voice query by a telematics unit, wherein the telematics unit comprises at least one analog digital converter;

converting the voice query to a compressed digital signal;

transmitting the signal to a call center node in communication with an information database via a wireless network;

parsing the signal at the call center node to determine an inquiry;

accessing the information database based on the inquiry;

formulating at least one response to the inquiry;

transmitting the at least one formulated response in a digital format over the wireless network to the telematics unit; and

translating the at least one formulated response to an analog format at the at least one analog digital converter.

2. The method of claim 1 further comprising:

optimizing the telematics unit for transmission of the voice query to a computer call center node.

3. The method of claim 2 further comprising:

filtering the received voice query before converting it to the digital signal.

4. The method of claim 1 further comprising:

compressing the voice query digital signal at the telematics unit, wherein a compression algorithm compresses the voice query signal at more than two times the compression ratio of human recognizable audio data compression, and wherein the formulated response is compressed to allow a user of the telematics unit to understand the formulated response .

5. The method of claim 1 further comprising:

transmitting the signal to the call center using a packet data connection.

6. The method of claim 1 wherein transmitting the at least one formulated response in a digital format over the wireless network to the telematics unit comprises:

transmitting the at least one formulated response in a digital streaming audio format.

7. The method of claim 1 wherein the analog digital converter further comprises a reversible digital analog converter.

8. The method of claim 1 wherein transmitting information via the wireless network further comprises transmitting information via an Internet protocol.

9. A computer usable medium including a program for responding to digital vehicle requests comprising:

computer readable program code for receiving a voice query by a telematics unit, wherein the telematics unit comprises computer readable program code for at least one analog digital converter;

computer readable program code for converting the voice query to a compressed digital signal;

computer readable program code for transmitting the signal to a call center node in communication with an information database via a wireless network;

computer readable program code for parsing the signal at the call center node to determine an inquiry;

computer readable program code accessing the information database based on the inquiry;

computer readable program code for formulating at least one response to the inquiry;

computer readable program code for transmitting the at least one formulated response in a digital format over the wireless network to the telematics unit; and

computer readable program code for translating the formulated responses to an analog format at the at least one analog digital converter.

10. The computer usable medium of claim 9 further comprising:

computer readable program code for optimizing the telematics unit for transmission of the voice query to a computer call center node.

11. The computer usable medium of claim 9 further comprising:

computer readable program code for compressing the voice query digital signal at the telematics unit wherein the computer readable program code includes compression algorithm code to compresses the voice query signal at more than two times the compression ratio of human recognizable audio data compression, and wherein the formulated response is compressed to allow a user of the telematics unit to understand the formulated response.

12. The computer usable medium of claim 9 wherein computer readable program code for transmitting information via the wireless network further comprises computer readable program code for transmitting information via an Internet protocol.

13. A system for responding to digital vehicle requests, the system comprising:

means for receiving a voice query by a telematics unit, wherein the telematics unit comprises means for at least one digital converter;

means for converting the voice query to a compressed digital signal;

means for transmitting the signal to a call center node in communication with an information database via a wireless network;

means for parsing the signal at the call center node to determine an inquiry;

means for accessing the information database based on the inquiry;

means for formulating at least one response to the inquiry;

means for transmitting the at least one formulated response in a digital format over the wireless network to the telematics unit; and

means for translating the formulated responses to an analog format at the at least one analog digital converter.

14. The system of claim 13 further comprising:

means for optimizing the telematics unit for transmission of the voice query to a computer call center node.

15. The system of claim 14 further comprising:

means for filtering the received voice query before converting it to the digital signal.

16. The system of claim 13 further comprising:

means for compressing the voice query digital signal at the telematics unit wherein the means for compressing compresses the voice query signal at more than two times the compression ratio of human recognizable audio data compression, and wherein the formulated response is compressed to allow a user of the telematics unit to understand the formulated response.

17. The system of claim 13 further comprising:

means for transmitting the signal to the call center using a packet data connection.

18. The system of claim 13 further comprising:

means for transmitting the at least one formulated response in a digital streaming audio format.

19. The system of claim 13 wherein the means for the analog digital converter further comprises means for a reversible digital analog converter.

20. The system of claim 13 wherein transmitting information via the wireless network further comprises means for transmitting information via an Internet protocol.

Evidence Appendix

None

Related Proceedings Appendix

None.